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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,463	09/17/2003	Vidyadhar Babu Hegde	61,101B	4354
25212	7590	11/19/2004	EXAMINER	
DOW AGROSCIENCES LLC 9330 ZIONSVILLE RD INDIANAPOLIS, IN 46268			SHIAO, REI TSANG	
			ART UNIT	PAPER NUMBER

1626

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,463

Applicant(s)

HEGDE ET AL.

Examiner

Robert Shiao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on application filed on 09/17, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/17/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application claims benefit of the application:
10/244,124 with a filing date September 13, 2002.
2. Claims 1-21 are pending in the application.

Election/Restriction

3. The Markush group set forth in the claims includes both independent and distinct inventions, and patentably distinct compounds (or species) within each invention. However, this application discloses and claims a plurality of patentably distinct inventions far too numerous to list individually. Moreover, each of these inventions contains a plurality of patentably distinct compounds, also far too numerous to list individually. For these reasons provided below, restriction to one of the following Groups is required under 35 U.S.C. 121, wherein an Group is a set of patentably distinct inventions of a broad statutory category (e.g. Compounds, Methods of Use, Methods of Making, etc.):

- I. Claims 1-21, in part, drawn to compounds/compositions of the formula in claim 1, wherein the variables R^4 and R^5 do not form a 5- or 6-membered ring containing 1 or 2 oxygen atoms thereof, the variables R^1 , R^2 , R^3 , X, and Y are as defined in claim 1, and their methods of use, classified in class 514/548 with various subclasses. If this group is elected, applicants are requested to elect a single species for the search purpose.

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- II. Claims 1-21, in part, drawn to compounds/compositions of the formula in claim 1, wherein the variables R^4 and R^5 form a 5- or 6-membered ring containing 1 or 2 oxygen atoms thereof, the variables R^1 , R^2 , R^3 , X, and Y are as defined in claim 1, and their methods of use. If this group is elected, applicants are requested to elect a single species for the search purpose. This group is subject further restriction requirement if it is elected.

In accordance with the decisions in *In re Harnisch*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980); and *Ex parte Hozumi*, 3 USPQ2d 1059 (Bd. Pat. App. & Int. 1984), restriction of a Markush group is proper where the compounds within the group either (1) do not share a common utility, or (2) do not share a substantial structural feature disclosed as being essential to that utility. In addition, a Markush group may encompass a plurality of independent and distinct inventions where two or more members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the other member(s) obvious under 35 U.S.C. 103.

Where an election of any one of Groups I-II is made, an election of a single compound or species is further required. Moreover, an election of a single compound is further required including an exact definition of each substitution on the base molecule (i.e., the formula (I)), wherein a single member at each substituent group or moiety is selected. For example, if a base molecule has a substituent group R^1 , wherein R^1 is recited to be any one of hydrogen, alkyl, etc., then applicant must select a

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single substituent of R¹, for example hydrogen; and each subsequent variable position. Should applicant traverse on the ground that the compounds are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the compounds to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C 103(a) of the other.

All compounds falling outside the class(es) and subclass(es) of the selected compound and any other subclass encompassed by the election above will be directed to nonelected subject matter and will be withdrawn from consideration under 35 U.S.C. 121 and 37 C.F.R. 1.142(b). Applicant may reserve the right to file divisional applications on the remaining subject matter. The provisions of 35 U.S.C. 121 apply with regard to double patenting covering divisional applications.

Applicant is reminded that upon cancellation of claims to a non-elected invention, the inventors must be amended in compliance with 37C.F.R. 1.48(b) if one of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 C.F.R. 1.48(b) and by the fee required under 37CFR 1.17(i). If desired upon election of a single compound, applicants can review the claims and disclosure to determine the scope of the invention and can **set forth** a group of compounds which are so similar within the same inventive concept and reduction to practice. Markush claims must be provided with support in the disclosure for each member of the Markush group. See

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MPEP 608.01(p). Applicant should exercise caution in making a selection of a single member for each substituent group on the base molecule to be consistent with the written description.

Rationale Establishing Patentable Distinctiveness Within Each Group

Each invention set listed above is directed to or involves the use or making of compounds which are recognized in the art as being distinct from one another because of their diverse chemical structure, their different chemical properties, modes of action, different effects and reactive conditions (MPEP 806.04, MPEP 808.01). Additionally, the level of skill in the art is not such that one invention would be obvious over either of the other inventions, i.e. they are patentable over each other. Chemical structures which are similar are presumed to function similarly, whereas chemical structures that are not similar are not presumed to function similarly. The presumption even for similar chemical structures though is not irrebuttable, but may be overcome by scientific reasoning or evidence showing that the structure of the prior art would not have been expected to function as the structure of the claimed invention. Note that in accordance with the holdings of Application of Papesch, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and In re Lulu, 223 USPQ 1257 (Fed. Cir. 1984), chemical structures are patentably distinct where the structures are either not structurally similar, or the prior art fails to suggest a function of a claimed compound would have been expected from a similar structure.

The above Groups represent general areas wherein the inventions are independent and distinct, each from the other because of the following reasons:

Each of Groups I-II is distinct and independent products and methods of use, one from the other on the basis of structure defined in the claimed products as directed to various compounds of the formula of claim 1 having various 5- or 6 –membered ring (i.e., pyran, furan, oxocane, 1,4-dioxepane, etc) and they differ in elements, bonding arrangement and chemical property to such an extent that a reference anticipating compounds of any one group would not render another group obvious. Absent factual evidence to the contrary, each is a different chemical compound.

In addition, because of the plethora of classes and subclasses in each of the Groups, a serious burden is imposed on the examiner to perform a complete search of the defined areas. Therefore, because of the reasons given above, the restriction set forth is proper and not to restrict would impose a serious burden in the examination of this application.

4. During a telephone conversation with Craig E. Mixan on October 27, 2004, a provisional election was made without traverse to prosecute the invention of Group I claims 1-21, in part. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-21, in part, of Group II, are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. It is noted that the claims contains subject matter "and other sucking pests", which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, i.e., see claim 15, lines 1-2.

6. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method controlling a sucking pest lepidoptera, does not reasonably provide enablement a method controlling a sucking pest other than lepidoptera, coleoptera, homoptera, hemiptera, thysanoptera, isoptera, orthoptera, diptera, hymenoptera, shiphonaptera, or acarina, see pages 90-91. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1988):

- 1) Nature of invention.
- 2) State of prior art.
- 3) Level of ordinary skill in the art.
- 4) Level of predictability in the art..
- 5) Amount of direction and guidance provided by the inventor.
- 6) Existence of working examples.
- 7) Breadth of claims.
- 8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

See below:

1) Nature of the invention

The claims are drawn to a method using compounds of the formula of claim 15 to control other sucking pests without limitation.

2) State of the prior art

The reference Pechacek et al. US 6,015,826 does not indicate which compounds of instant compounds may be useful in the claimed invention. Pechacek et al. '826 is pertaining to 3-(substituted phenyl)-5-(thienyl or furyl)-1,2,4-triazole compounds.

3) Level of ordinary skill in the art.

The level of ordinary skill in the art is high. The claims are drawn to "a method using compounds of the formula of claim 15 to control other sucking pests without limitation". Applicant's specification does not enable the public to prepare such "a

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method using compounds of the formula of claim 15 to control other sucking pests without limitation" by the instant examples disclosed in the specification.

4) Level of predictability in the art.

The claims are drawn to "a method using compounds of the formula of claim 15 to control other sucking pests without limitation", see claim 15, lines 1-2. Different types of the genus of methods require various experimental procedures and without guidance that is applicable to all possible "a method using compounds of the formula of claim 15 to control other sucking pests without limitation", there would be little predictability in the scope of claimed methods.

5) Amount of direction and guidance provided by the inventor.

The claims are drawn to "a method using compounds of the formula of claim 15 to control other sucking pests without limitation", encompasses a vast number of methods. Applicant's limited guidance does not enable the public to prepare such "a method using compounds of the formula of claim 15 to control other sucking pests without limitation" in the specification. There is no enablement for "a method using compounds of the formula of claim 15 to control other sucking pests without limitation", i.e., a method controlling a sucking pest other than lepidoptera, coleoptera, homoptera, hemiptera, thysanoptera, isoptera, orthoptera, diptera, hymenoptera, shiphonaptera, or acarina, which are neither enabled nor supported in the specification.

6) Existence of working examples.

The claims are drawn to "a method using compounds of the formula of claim 15 to control other sucking pests without limitation", encompasses a vast number of methods. Applicant's limited working examples do not enable the public to prepare

such a numerous amount of “a method using compounds of the formula of claim 15 to control other sucking pests without limitation” in the specification. Applicants claim “a method using compounds of the formula of claim 15 to control other sucking pests without limitation”, however, the specification provides only limited examples of the methods.

7) Breadth of claims.

The claims are extremely broad due to the vast number of possible “a method using compounds of the formula of claim 15 to control other sucking pests without limitation”.

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The specification did not enable any person skilled in the art to which it pertains to make or use the invention commensurate in scope with this claim. In particular, the specification failed to enable the skilled artisan to practice the invention without undue experimentation. The skilled artisan would have a numerous methods in order to obtain “a method using compounds of the formula of claim 15 to control other sucking pests without limitation” as claimed. Based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not perform the claimed compounds without undue experimentation, see *In re Armbruster* 185 USPQ 152 CCPA 1975. Incorporation of the limitation of “a method using compounds of the formula of claim 15 to control other sucking pests without limitation”, i.e., homoptera, hemiptera, thysanoptera, isoptera, orthoptera, diptera,

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hymenoptera, shiphonaptera, and acarina, would obviate the rejection, see pages 90-91 of the specification.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by

Pechacek et al. 6,015,826.

Applicants claim a compound/composition of the formula of claim 1 as agents controlling mites.

Pechacek et al. disclose two compounds, i.e., compounds No. 23 and 29 of columns 25-27, as agents controlling mites. Pechacek et al. compounds clearly anticipate the instant compound of the formula of claim 1, wherein the variables X and Y independently represents F, the variable R³ represent C₁-C₃ alkyl (i.e., methyl), the variables R¹ and R² independently represent hydrogen, the variables R⁴ and R⁵ independently represent hydrogen, halogen (i.e., chloro), or C₁-C₆ alkoxy (i.e., methoxy).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the

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prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Also see M.P.E.P. 2113.

9. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pechacek et al. 6,015,826.

Applicants claim a compound of the formula of claim 1 as agents of controlling mites, and this compound and the methods of use are found in the pages 2-75 of the specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Pechacek et al. disclose a number of 1, 2, 4 - triazole compounds as agents of controlling mites, see columns 25-49, compounds No. 24, 63, 119, 120, 121, 125, 126, and 131.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant claims and Pechacek et al. is that the instant compounds are isomers of Pechacek et al. It is noted that the instant phenyl moiety is linked to the second position of the thiophene ring, while Pechacek et al. is linked to the third position of the same thiophene ring.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the claims 1-21 *prima facie* because one would be motivated to employ the compounds of Pechacek et al. to exchange the third and the second positions of phenyl moiety and to obtain instant compounds, wherein the variable X and Y independently represents Cl or F, the variables R¹ and R² independently represent hydrogen, alkyl (i.e., methyl) or halogen (i.e. Cl or Br), the variable R³ represents C₁-C₃ alkyl (i.e., methyl), the variable R⁴ represents C₁-C₆ alkoxy (i.e., methoxy) or halogen (i.e., Cl), the variable R⁵ represents hydrogen or halogen (i.e., Cl).

Nothing unobvious is seen in substituting the known claimed isomer of Pechacek et al. for the structurally similar isomer, since such structurally related compounds suggest one another and would be expected to share common properties (i.e., controlling mites activity) absent a showing of unexpected results, see *In re Norris*, 84 USPQ 458 (1950).

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of Hegde et al. US 6,770,665. Although the conflicting claims are not identical, they are not patentably distinct from each other and reasons are as follows.

Applicants claim a compound of the formula of claim 1 as agents of controlling lepidoptera, and this compound and the methods of use are found in the pages 2-75 of the specification.

Hegde et al. claim a compound of formula (I) as agents of controlling lepidoptera, and a number of compounds have been specifically exemplified, see columns 83 and 12-78.

The difference between the instant claims and Hegde et al. is that the instant compounds are isomers of Hegde et al. It is noted that the instant phenyl moiety is

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linked to the second position of the thiophene ring, while Hegde et al. is linked to the third position of the same thiophene ring.

One having ordinary skill in the art would find the claims 1-21 *prima facie* because one would be motivated to employ the compounds of Hegde et al. to exchange the third and the second positions of phenyl moiety and to obtain instant compounds, wherein the variable X and Y independently represents Cl, the variables R^1 , R^2 , and R^3 independently represent alkyl (i.e., methyl), the variables R^4 represents haloalkoxy, the variables R^5 represents halogen.

Nothing unobvious is seen in substituting the known claimed isomer of Hegde et al. for the structurally similar isomer, since such structurally related compounds suggest one another and would be expected to share common properties (i.e., controlling lepidoptera activity) absent a showing of unexpected results, see *In re Norris*, 84 USPQ 458 (1950).

Objection

12. Claims 1-21 are objected to as containing non-elected subject matter, i.e., the variables R^4 and R^5 form a 5- or 6-membered ring containing 1 or 2 oxygen atoms.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Shiao whose telephone number is (571) 272-0707. The examiner can normally be reached on 8:30 AM - 5:00 PM.

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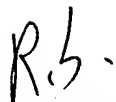
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Robert Shiao, Ph.D.
Patent Examiner
Art Unit 1626

November 18, 2004

11/18/04